

In the United States Patent and Trademark Office

Application No.: 10/783,616

Filing Date: 02/20/2004

Title: METHOD AND APPARATUS FOR A
COLLABORATIVE INTERACTION NETWORK

Inventor: Mark Sylvester, et al.

Examiner: Safet Metjahic

Attorney Docket No.: M004 100110

Art Unit: 2161

Declaration Under 37 C.F.R. § 1.131

I, Mark Sylvester, a named inventor on Application Serial No. 10/783,616 (the "Application"), declare as follows:

1. The invention disclosed in Application was conceived in December 2002 with development for initial testing completed by February 2003.
2. A system providing an initial experimental demonstration of the invention, known by the trademark INTRO™, was deployed for use at the TED Conference beginning on February 25, 2003.
3. A paper describing the INTRO™ system (the "Paper") which incorporates the invention disclosed in the Application was presented by the inventors of the Application at the MAX 2003 Macromedia Development Conference held November 19, 2003 through November 21, 2003. A copy of the Paper presented is attached to this declaration as Exhibit A.
4. The Paper discloses in Figure 1 the login screen which is substantially identical to the drawing presented in the Application as FIG. 1a and in Figure 2 the login screen with the high-lighted submit button activated as presented in FIG. 1b of the Application. These figures with associated description in the text provide exemplary embodiments which correspond to the first element of claim 1 of the Application for "means for entering login data for a user" and the initial step of claim 15 of the Application for "receiving login data entered by a user".
5. Figure 3 of the Paper discloses the screen for basic profile data entry presented in the application as FIG. 3b. The basic structure of the accordion features are shown at the

bottom of the figure and described in the immediately preceding text which are shown in the Application in unexpanded form as FIG. 3a. These figures and the corresponding description in the text disclose exemplary embodiments of the second element of claim 1 “means for inputting basic user profile data elements”.

6. Description in the text of the Paper below Figure 3 discloses the “Talk to Me About fields” in the second accordion layer and the “affinity sliders” which correspond to the element “means for receiving user characteristics data” for both the “means for text entry” and “means for proportional selection” required in claim 1 as shown in FIG. 4 of the Application. The sliders are an exemplary embodiment of the proportional selection means defined in claim 2 and are further described in the Paper with respect to Figure 7. This disclosure also provides an embodiment for the limitation in claim 16 of “wherein the proportional selection includes the step of providing a slider associated with a predetermined term...”

7. The next text paragraph in the Paper describing the third and fourth accordion layers and the “sandbox” provides exemplary embodiments of the elements claimed in claims 3 and 4, “a sandbox for receiving a plurality of attributes selectable by the user” and “a plurality of proportionality bins in which the selected attributes are placed”, and shown in FIG. 5a. These elements also correspond to the step of “providing a plurality of attributes selectable by the user for placement in a sandbox” in claim 17.

8. Figure 4 and the accompanying text in the Paper regarding the Visualizer disclose an element of the embodiment corresponding to FIG. 7 of the Application and associated description and the element of claim 1 for “Means for displaying a representation of the universe of data as single points in a multidimensional relation to a point representing the data of the particular user”. Figure 5 of the Paper and the immediately following text disclose an element of the embodiment corresponding to FIG. 8 of the application with its associated description which provides a basis for the further limitation in claim 1 of “the displaying means scalable in range from the entire universe of data to data for users in a close neighborhood of the particular user’s profile” and the step in claim 15 of “displaying a representation of the universe of data as single points in multidimensional relation to a point representing the data of the particular user”.

9. Figure 6 and text intermediate Figures 5 and 6 in the Paper provide exemplary embodiments of and correspond to FIG. 9 of the Application and disclose the final element of claim 1, “means for expansion of a selected one of the single points for display of the profile and characteristic data of the user associated with the selected one single point” and the limitation on the step in claim 15 of “the display scalable in a range from the entire universe of data to data for users in a close neighborhood of the particular user’s provide and characteristic data”.

10. The system described in the Paper was fully operational at the MAX 2003 Macromedia Development Conference held November 19, 2003 through November 21, 2003 with all of the features described which correspond to a full reduction to practice of the invention as claimed in claims 1 and 15.

11. Selected portions of code disclosed in the Paper below Figure 3 and included in the operational system correspond to the code disclosed in the Application as Table 1 and Table 2.

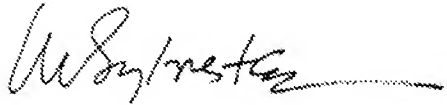
12. Inventors on the present application Mark Sylvester and Kymberlee Weil constituted the initial and only employees of Mixed Grill, L.L.C., the initial assignee of the application and invention and numerous trade shows and customer presentations of systems employing the invention after the TED and MAX 2003 conventions referenced in paragraphs 2 and 3. Four conferences were attended with over 5000 users employing the system after the TED conference. The present invention was initially disclosed for preparation of a patent application on 7/23/2003. I personally prepared the basic drawings for the application in addition to my ongoing duties with Mixed Grill. The Application was filed on 2/20/2004, less than one year after our initial public disclosure as required for patentability.

13. The Examiner for the Application has cited US Patent Publication 2005/0159970 to Buyukkokten et al. having a priority date of 1/24/2004 in a rejection of claims in the Application under 35 U.S.C. §102(e). Based on the evidence presented above, the present invention was conceived and reduced to practice prior to the filing date of the Buyukkokten et al. reference.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further

that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Executed on this 16 day of May, 2007 at Carpinteria, California by:

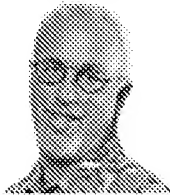
A handwritten signature in black ink, appearing to read "M Sylvester", followed by a horizontal line.

Mark Sylvester

Exhibit A
Macromedia MAX 2003 Article
Using Flash MX to Connect People with the Intro™ Application

Adobe MAX 2003 Article

Using Flash MX to Connect People with the Intro™ Application



Mark Sylvester

Mixed Grill



Kimberlee Weil

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Beau Ambur

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This article gives you a sneak peek at Intro™, which all attendees of Macromedia MAX 2003 can use. Intro helps people get more out of the conference by hooking them up with other attendees prior to their arrival in Salt Lake City. The software customized for this conference is written in Macromedia Flash MX Professional 2004 and highlights the new [Hulu.com](#) games in the user interface.

All registered MAX attendees will receive an e-mail from Macromedia that contains a login and password for Intro. From there, they can find out who else is coming to MAX, send them IntroMail messages, and set up meetings before they arrive at the conference.

To learn more about Intro and ask probing questions about it at MAX 2003, be sure to attend Beau Ambur and George Riley's session, "The Technology Behind the Intro RIA."

Intro™ is a Rich Internet Application designed to connect people who share common interests, both personal and professional. Intro puts a human face on online connections by showing pictures or short videos of people who have things in common. This helps remove barriers so that people feel more comfortable meeting each other and establishing connections quickly.

Intro is a perfect example of what's been termed *social software*—applications that foster group interaction. We regard Intro as "business dating". It introduces people to each other, one business connection at a time. At a period when people are reaching out to restore humanity in their lives, Intro succeeds at a very simple task—putting us in touch with the people around us whom we really would like to know better.

Designing the Intro Application

Intro was designed by a technically sophisticated team to appeal to nontechnical users. To attract this specific audience, we calculated every aspect of a person's interaction with Intro to intrigue those who generally do not like being profiled. For example, each task is visual and clearly communicates how long it takes to complete. The "accordion" navigational structure assures users that there are a limited number of steps left to complete each task. We constructed the profiling steps so that as soon as users complete one step they go automatically to the next one. At the end of creating their profile, users go directly to the Visualizer where they can instantly view their matches. An embedded messaging system allows quick communication among attendees too. Even people who normally do not use e-mail quickly take advantage of this easy way to reach out to others.

From the start we designed Intro to handle many, many users looking for suitable business contacts. At the conference where we debuted Intro, we knew that more than 1,000 people would be entering data into the system. We also knew it would be a challenge to display all that information in a manner that helped people grasp its meaning quickly. After all, the Visualizer doesn't just display data, it helps people understand it. Our solution was for Intro to show all conference attendees in one view—with those matching one's personal interests on one side and those matching one's professional interests on the other. By arranging them radially from the center, Intro showed users the names of

people who closely matched their interests. For people who wanted to meet those who least matched their interests, Intro displayed the "fringe results" as well, possibly resulting in more interesting (if less predictable) conversations.

We built Intro using intelligent text fields and accordion menus throughout the application to achieve a consistent design. Original modules include the Sandbox for selecting attributes and the Visualizer for displaying match results graphically. Considering our target of less than five minutes to complete a user's profile, we designed the software with ease of use in mind.

Because we had eight weeks to design and develop the entire application, we had to expedite our product specifications and design decisions. An additional consideration was the geographic diversity of the team, which spanned four states. Online communication tools (developed by BAX Corp. using Flash Communication Server) were critical to the project's timeliness as well.

Since the debut of Intro, the major usability constraint has been the availability of a sufficient number of computers at each conference. Wherever there is a dedicated Internet lounge or kiosk area, the user experience is very good. But wherever we have installations that are largely wireless and don't feature a dedicated floor space in which to generate a critical mass of users, the social experience suffers, as does the participation. An undeniable sense of community forms when everyone in a room interacts with the same application in real time.

We developed Intro originally in Macromedia Flash MX and targeted Flash Player 6. The application consists of two parts: a front-end visual client delivered with a web browser and Flash Player, and a back end consisting of a SQL database, Flash Communication Server, ColdFusion components, and a Flash Remoting gateway. We chose Flash as the best way to develop this application because of the wide range of functionality that we needed to integrate. The end result is an engaging application that features quick and visual access to a large set of data, along with rich features such as video mail.

Note: This application was originally developed in December 2002 when Macromedia Flash MX and Flash Player 6 were the current tools available. For MAX 2003 we updated this application using Macromedia Flash MX Professional 2004. Should you choose to develop a Rich Internet Application, weigh whatever player adoption and server-side technology best suits your needs.

Examining the Intro Application

Intro required a reasonably large amount of development work to complete. Breaking the application up into several large pieces of key functionality helped to separate tasks. Breaking each of these pieces even further into separate packages of functionality helped us organize the development process and code.

Intro was developed in three discrete parts: Login, Profiler, and Visualizer.

Login: The Login portion is fairly simple and straightforward. This module collects a person's username and password and then sends it to the server for verification. We added a few enhancements to this process to simplify user interaction and feedback. For example, since the module requires fields for this process, the required fields display an orange triangle, similar to forms that use an asterisk to denote a required field (see Figure 1).



Figure 1. Intro's main Login screen

As the user enters information, the client automatically performs character validation. Once the server validates the field, the orange triangle disappears, indicating that the entered information is sufficient for login. When users fill in both fields, the Submit button becomes active so they can log in (see Figure 2). Adding a simple check like this to your application not only reduces the amount of erroneous queries to your server but also helps users identify problems as they happen.

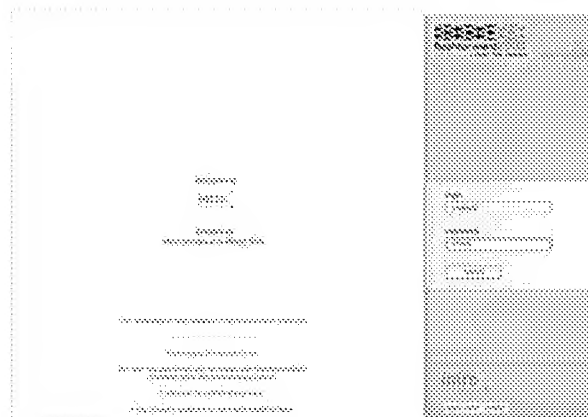


Figure 2. Clicking Submit to complete the login process

Whenever you develop a data-driven application like Intro, you depend heavily on server-side data. This can create a lot of problems when you try to develop the client side of the application. We strongly recommend creating a set of sample data that you can load from your local system. For instance, one of the first steps that Intro requires is a login. To facilitate continued testing and interactive application development, you should spoof this sort of activity. You can do this easily by creating text or XML files that return the expected result from the server. Here is an example of how you could use this in your development:

```
if (globalMode) {
    url = "queries/login.xml";
} else {
    url = gServerPath + "login.php" + params;
}
```

Imagine that you have set `globalMode = true` and created a file in a queries folder called `login.xml`, which returns the results of a successful login. Setting up your application this way makes it easy to identify client coding problems without having to troubleshoot those problems by seeing what happens on the server side, when it might not be as clear.

Profiler: In order for Intro to work, it first must collect information about users. It accomplishes this through a series of pages contained within an accordion (see Figure 3). The accordion format not only helps separate each task but gives users a sense of how long it takes to enter their information and where they are in the process. The first screen, or accordion layer, is similar to the login page; it consists of text fields that self-validate. Because we have a database driving the application, there is already information available to the client application about the user. This means that most user data is already filled in and users mainly verify its accuracy.

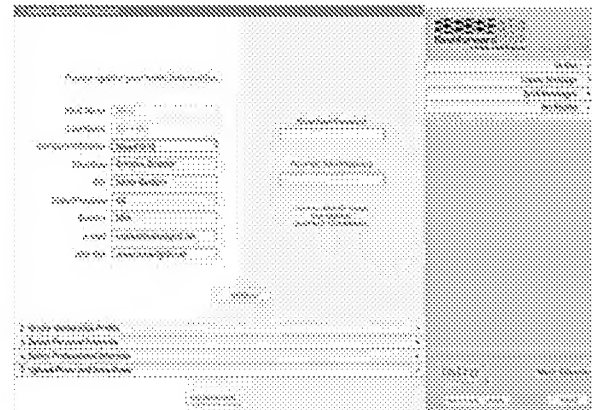


Figure 3. The first screen of the Profiler

The second accordion layer shows the Talk to Me About fields, where users enter words or phrases for their Intro Card (shown later in Figure 6). These are simply conversation starters or ways for people to learn more about each other. In some cases, these Talk to Me About phrases and words have additionally appeared on attendees' badges while at the conference. Also appearing on the second screen are so-called affinity sliders (shown later in Figure 7). Users move them to match their affinity to the word next to the slider. The comparisons between your slider positions and those of the person you match up with appear later when you click the Compare Me button on the Intro Card.

The third and fourth accordion layers show the Sandbox with its 168 attributes from which users select words that describe their personal and professional interests. The fifth screen allows users to upload a photo, or snap a photo or record video using a web cam.

As users complete the data in each page, Intro collects it and sends it to the server. In order to send the data, the application converts it into parameters of a server query. You can simplify this task by creating a parameter manager that loops through the available data and packages it into an object:

```
var gPageParams_array = new Array("firstName", "lastName", "company", "title", "city", "state", "country", "email", "website", "password");
var gPageParams_obj = new Object();
var param;
for (var i = 0; i < gPageParams_array.length; i++) {
    param = gPageParams[i];
    gPageParams_obj[param] = this[param + "_txt"].text;
}
```

Now you have a single object that contains all the data being sent to the server. Because we used Flash Remoting for this application, we could send the object itself to the server as our parameter argument. In other cases you may need to create an actual query string, similar to a GET method, such as the following:

```
var params = "";
for (var n in gPageParams_obj) {
    params += n + "&" + gPageParams_obj[n] + "&";
}
```

This results in a string like `firstName=Heau&lastName=Ambur...` that you can then append to a server query as a group of parameters.

Visualizer: This module is the heart of Intro. It's a single view that shows all users in the database in one place (see Figure 4). The Visualizer represents each person as a plus sign (+). Because there can be well over 1,000 people at one time, it is very important to keep the data as light as possible to reduce the amount of bandwidth required to generate this view and to keep processing time to a minimum.

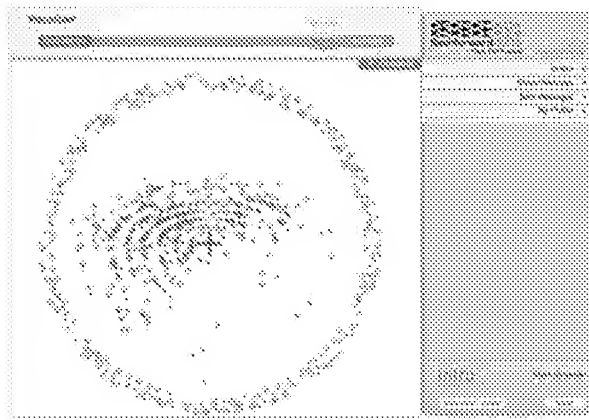


Figure 4. A zoomed-out view of the Visualizer

Figure 4 shows a radial graph of relational data. The server calculates all possible variables available for each user and returns two values about each person to the client. These two pieces of information consist of a personal and a business match rating, which combine for a total possible match of 100 percent. All people in the database are then visually arranged according to these values. Anyone who matches you with more personal than business interests falls towards the left side, while a higher business match falls towards the right. If you have a mutual number of business and personal interests, then people who match them both will fall towards the top middle. Conversely, if you match people only in one category, they will fall in the bottom middle. Most important, of course, is where people appear in relation to the large orange plus sign at the center (that's you). The closer to the center they are, the more they match. Figure 5 demonstrates what happens when you zoom into the view.

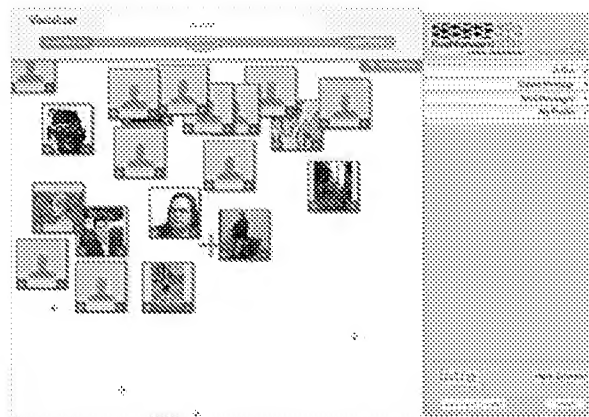


Figure 5. A zoomed-in view of the Visualizer

Once you zoom in, the view changes. You can see pictures of the other users and identify more easily who is who. Clicking a person opens their Intro Card, which displays their contact information (see Figure 6). From here you can send an Intro message containing text and video by clicking the Send a Message button. This opens the IntroMail component of the application where you can easily send and read video and text messages. You can add anyone to your contact list by clicking the middle button or find out more about them by comparing yourself to them.



Figure 6. A sample Intro Card

Clicking the Compare Me button opens a detailed list of interests. In the middle you see your common interests. At the bottom of the comparisons are your affinity sliders (see Figure 7).

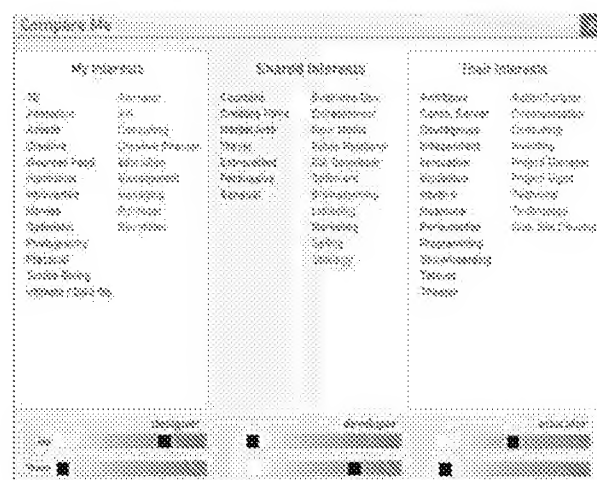


Figure 7. The Compare Me screen

The Future of Intro

Since we debuted Intro at the TED Conference in February 2003, over 5,000 people at five conferences have used the software, including Flashforward2003, the O'Reilly Emerging Technology Conference, and Media X at Stanford University. We have received suggestions to develop a version of Intro for internal corporate applications, for connecting businesses to one another, and for use as a novel front end to dating websites.

We are currently building a version of Intro for B2B connections. It is based on the concept that businesses in small communities often do not know what products and services are offered locally—exactly the way we don't really know one another in our own cities. We are modifying Intro to add search capability as well as an expanded business profile section. The personal traits will be removed in order to make room for more professional-related information, such as testimonials, product specifications, videos, and an expanded About Us section that takes the application to a new level.

We have also designed a version of Intro for use in human resource (HR) departments. Its use there will cover skills inventory, employee resource management, teambuilding, continuing education, and finding study partners within large organizations. Intro requires little modification to repurpose it for this usage. The primary back-end work integrates with HR databases and builds a conduit to those systems to automate employee migration in and out of the company and through various departments.

Finally, we are completely rewriting Intro to take advantage of Flash MX 2004 component availability so that we can bring the speed and power of the latest version of Flash to our customers.

About the Team

Intro was developed by Mixed Grill in conjunction with Macromedia. The team included:

- Executive Producers: Mark Sylvester (Mixed Grill) and Peter Goldie (Macromedia)
- Supervising Producer: Kimberlee Weil (Mixed Grill)
- Development: Beau Ambur (BAX Corp.) and George Riley (Macromedia)
- Design: Jason Davis and Jeff Faulkner (deepPlay)
- Video Component: Sam Wan (samuchwan.com)
- Creative Advisors: Michael Gough and Michael Sundermeyer (Macromedia)

Intro was awarded Best Application at Flashforward2003 in New York.

Read more about Intro at <http://www.2intro.com/>.

Intro™ is a trademark of Mixed Grill, LLC. The Sandbox and the Visualizer are patent-pending modules of Intro.

About the Authors

Mark Sylvester was a cofounder of Wavefront Technologies, one of the first commercial animation software developers, in 1984. Alias/Wavefront's software, Maya, was used to create the award-winning visual effects in the Lord of the Rings movies, as well as The Matrix, Star Wars, and most of the films made in Hollywood today. Maya was awarded two Scientific and Technical Achievement Awards by the Motion Picture Academy of Arts and Sciences and received an Oscar at the 75th Annual Academy Awards in 2003. Currently, Mark is the founder and creative director of Mixed Grill where he is passionate about information visualization and focuses their efforts on projects related to this field.

Kimberlee Weil is the chief operating officer of Mixed Grill. In addition to her work at Mixed Grill, she is the conference director of Flashforward, the nation's preeminent conference for designers and developers of Flash applications. Kimberlee is the author of two hands-on training books that focus on Macromedia Flash. She is a nationally recognized speaker in the new media industry, presenting at national and international conferences and leading universities. She has been involved in the creation and implementation of web-enabled solutions and project management, combining technical expertise with business process methodology. Kimberlee received an MBA from Pepperdine University.

Beau Ambur, founder of San Francisco-based BAX Corp., uses Macromedia Flash on the Internet, in CDs/DVDs, and on mobile devices to create games, entertainment pieces, and applications for companies like Atom/Shockwave, DaimlerChrysler, Ford Motor Company, Warner Bros., and Cisco Systems. Beau has also worked with Macromedia developing Flash Communication components, Macromedia Control applications, and contributing to the Macromedia INTO site. He is also president of the oldest and largest Macromedia user group, the San Francisco Macromedia User Forum. Read more about Beau at <http://www.ambur.com/>.

